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Date October 21, 2008

To Examiner Brian Q. Le
U.S. Patent and Trademark Office

Facsimile number 10559-083100001 / (571) 273-7424

From Ronald L. Gordon, PhD.
Technology Specialist

Re FACE TRACKING
Applicant: Konstantin V. Rodyushkin et al.
Application No.: 10/623,127
Filing Date: July 18, 2003
Our Ref.: 10559-0831001

Number of pages including this page 5

Message Dear Examiner Le,

As per your facsimile dated October 16, 2008, attached please find our Supplemental Amendment in Reply to action of July 14, 2008.

Thank you.

Sincerely,

Ronald L. Gordon

Attorney's Docket No.: 10559-0831001 / P16146

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Konstantin V. Rodyushkin et al.	Art Unit	: 2624
Serial No.	: 10/623,127	Examiner	: Brian Q. Le
Filed	: July 18, 2003	Conf. No.	: 4494
Title	: FACE TRACKING		

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUPPLEMENTAL AMENDMENT IN REPLY TO ACTION OF JULY 14, 2008

Please amend the above-identified application as follows:

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-26. (Cancelled)

27. (Currently Amended) A computer-implemented method comprising:
using a processor to perform the steps of:

receiving a first digital image in a sequence of digital images and eye and mouth coordinates;

outputting eye and mouth coordinates on a subsequent digital image in the sequence of digital images; and

computing transformation parameters that represent a transformation from a base face model for the first digital image to a subsequent deformable model for the subsequent digital image;

wherein receiving comprises estimating the base face model, denoted Mb, and the base face model's transformation parameters, denoted T', by the eye and mouth coordinates;

wherein outputting comprises:

calculating an initial model, denoted M, for the subsequent digital image as a transformed base model Mb using the transformation parameters T',

rotating the subsequent image to the first digital image, denoted I(x,y), to generate a normalized model of the initial model M;

calculating a horizontal and vertical gradient map on the rotated image; and

estimating new transformation parameters, denoted T*, by minimizing an energy function E(T,I(x,y)) representative of the goodness of fit between the transformed model

and the corresponding digital image, and of the optimality of the new transformation parameters, where T* corresponds to the complex argument of the minimum of the energy function, denoted arg minT E(T,I(x,y)).

28-30. (Cancelled)

31. (Previously Presented) The method of claim 27 in which minimizing comprises a downhill simplex method with initial transformation parameters T = T'.

32. (Previously Presented) The method of claim 27 further comprising calculating the eye centers and the mouth corners by the transformed base model using the transformation parameters T*.

REMARKS

In response to the communication dated October 16, 2008, Applicants have amended claim 27. Applicants also note that the argument T in the function E(T,I(x,y)) in claim 27 refers to the quantity defined in paragraph [0024]: "T = (DES, DEMS, DMW, A, DX, DY) is a looked for vector of transformation parameters."

No fee is believed to be due at this time. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: October 21, 2008

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